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PINTLAR CORPORATION
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P.O. Box 480 Fax (208) 783-6621
Kellogg, Idaho 83837

February 25, 1994

Ms. Rebecca Goehring
U.S. EPA
422 W. Washington St.
Boise, Idaho 83702

RE: Bunker Hill Superfund Site - Asbestos Removal Work Plan

Dear Ms. Goehring

Enclosed please a copy of our work plan for the asbestos removal as referenced in our Asbestos Abatement Notification sent to you on February 18, 1994. This work plan was developed for Pintlar by MCS Environmental of Missoula, Montana.

Should you have any questions regarding this work plan please call Jim Hodge at 208/784-1321.

Sincerely

Antonio J. Chavez
Vice President - Engineering

encl.

cc: Trey Harbert (w/o encl)
Jim Hodge
Bill Hudson
Rich Nearing
Scott Peterson
Ed Whitley

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SECTION 02080

ASBESTOS REMOVAL/ABATEMENT

PART 1- GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 CERTIFICATION

This document was prepared in accordance with applicable EPA, OSHA, State of Idaho, and Local Regulations by an EPA accredited project designer, Mr. Wade K. Johnston ID# MTA0694, from MCS Environmental Inc., Mountain Laboratories, 2104 Reserve Street, Missoula, Montana 59801.

1.3 SUMMARY

A. The work covered under this section includes: removal asbestos containing materials (ACM) around roaster access doors prior to the removal/recycling of Zinc and heavy metal containing dusts and debris from the Roaster Floor Building and the Roaster Building, Bunker Hill Superfund Site, Kellogg, Idaho.

The work includes the removal of a 2 foot section of ACM breaching material from around the access hatches to the six roasters in the Roaster Floor Building and the one roaster in the Roaster Building. Approximately 840 square feet of ACM breaching, and miscellaneous ACM dust/debris shall be removed in this phase of work.

The six roasters in the Roaster Floor Building have three access hatches which are located on the 2nd, 3rd and the top floors of the building. These access hatches are approximately 3 foot square.

The one roaster in the Roaster Building has three access hatches which are located on the 2nd, 3rd and the 4th floors of the building. These access hatches are approximately 3 foot square.

The Pintlar Corporation shall dispose of waste and associated materials generated by project activities on the Bunker Hill Superfund Site, Kellogg, Idaho.

1.4 SCOPE OF WORK

A. Roaster Floor Building - demarcation of abatement areas; install critical barriers/build containment; construction of a two stage dry decontamination unit; establish negative air machines; wetting and removal of asbestos breaching and localized contaminated dust/debris; thorough cleaning by HEPA vacuuming and wet wiping methods; thorough encapsulation of the abatement area; bagging and disposal of ACM; and air monitoring during removal.

B. Roaster Building - demarcation of abatement area; install critical barriers/build containment; construction of a two stage dry decontamination unit; establish negative air machines; wetting and removal of asbestos breaching and localized contaminated dust/debris; thorough cleaning by HEPA vacuuming and wet wiping methods; thorough encapsulation of the abatement area; bagging and disposal of ACM; and air monitoring during removal.

C. Proper disposal of ACM waste and associated materials generated by project activities on the Bunker Hill Superfund Site, Kellogg, Idaho.

1.5 DEFINITIONS

A. Abatement: Procedures to control fiber release from asbestos-containing building materials. Includes encapsulation, enclosure and removal.

B. Air lock: A system for permitting restricted ingress or egress while allowing air movement from an uncontaminated area during negative air pressure conditions in the work area, typically consisting of two curtained doorways at lease 3 feet (1 meter) apart.

C. Amended Water: Water containing a wetting agent or surfactant.

D. Area Monitoring: Sampling of asbestos fiber concentrations within the asbestos removal area which is representative of the airborne concentrations of asbestos fibers which may reach the breathing zone.

E. Asbestos: The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

F. Asbestos Fibers: This expression refers to asbestos fibers having an aspect ratio of 3:1 and longer than 5 microns.

G. Barrier Monitoring: Sampling conducted at, or near, temporary barriers (such as decon unit, temporary dividing walls, etc.) during abatement.

H. Bridging Encapsulant: A liquid material which can be applied to asbestos-containing material and which controls the possible release of asbestos fibers form the material by creating a membrane over the surface. Also referred to as a sealant when used to seal residual fibers left on a surface from which asbestos has been removed.

I. Clean Room: An uncontaminated area or room which is part of the decontamination enclosure system, with provisions for storage of worker's street clothes and protective equipment.

J. Confined Space: Refers to a space which by design has limited openings for entry and exit; unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include, but are not limited to storage tanks, compartments of ships, process vessels, pits, silos, vats, de-greasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, crawl spaces, attics, and pipelines. An enclosed area that has the following characteristics: its primary function is something other than human occupancy; and has restricted entry and exit; and may contain potential or known hazards.

K. Curtained Doorway: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing three overlapping sheets of plastic sheet over an existing or temporarily framed doorway, securing each along the top of the doorway, and securing the vertical edge of one sheet along side one side of the doorway, and securing the vertical edge of the other sheets along the opposite vertical side of the doorway. Two curtained doorways shall be spaced a minimum of three feet (1 meter) apart when used to form an air lock.

L. Decontamination Enclosure System: A decontamination enclosure system for workers, materials, and equipment, consisting of a designated area of the work area, an equipment room, shower room, a clean room by connecting a series of rooms with curtained doorways.

M. Environmental Monitoring: Samples collected near the exhaust of the negative air discharge point, at a distance from the discharge point sufficient to not influence the air stream within the collection cassette.

N. Equipment Room: A contaminated area or room which is part of the decontamination enclosure system, with provisions for storage of contaminated clothing and equipment.

O. Friable Asbestos Material: Material that contains more than one percent asbestos and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

P. HEPA Filtered Equipment: High Efficiency Particulate Air filtered equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be 99.97 percent efficient for retaining fibers of 0.3 microns or larger.

Q. Industry Standards: Applicable standards of construction industry have same force and effect on performance of the work as if copied directly into contract documents or bound and published therewith. Standards referenced in contract documents or in governing regulations have precedence over non-referenced standards, insofar as different standards may contain overlapping or conflicting requirements. Comply with standards in effect as of date of contract documents, unless otherwise indicated.

R. Mini-Isolation Method: A method of isolation area preparation where only the portion or portions of the total room area containing ACM are isolated. Decontamination facilities and air exchange requirements are identical to those under standard isolation.

S. Negative Air Pressure Equipment: An HEPA filtered local exhaust systems capable of maintaining a constant, low velocity air flow into the Decontamination Enclosure System and Work Area from adjacent uncontaminated and unsealed areas.

T. Non-Friable Asbestos Material: Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not release fibers in excess of the asbestos control limit during any appropriate use, handling demolition, storage, transportation, processing, or disposal.

U. OSHA Compliance Monitoring: Sampling of asbestos fiber concentrations within breathing zone of an employee. Responsibility of Pintlar Corporation.

V. Removal: All herein specified procedures necessary to strip all asbestos containing materials from the designated areas and to dispose of these materials at an acceptable site.

W. Sealing Agent: A liquid product similar to bridging encapsulant that is applied to surfaces from which asbestos has been removed to prevent release of any residual asbestos fibers into the environment.

X. Shower Room: A room between the clean room and the equipment room in the worker decontamination enclosure system, with hot and cold running water and suitably arranged for complete showering during decontamination. The shower room comprises an air lock between contaminated and clean areas.

Y. Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

Z. Time Weighted Average: The TWA is an 8-hour time weighted average airborne concentration of fibers, longer than 5 microns, per cubic centimeter of air.

AA. Vec-Loader: A truck, trailer, or other portable machine equipped with a high flow vacuum filtration system. Designed to remove large quantities of contaminated soil or other asbestos-contaminated debris, and provide for load out of material and expulsion of HEPA filtered air.

BB. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning tools as asbestos-contaminated waste. Use of HEPA filtered vacuums is recommended during wet cleaning.

1.6 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in text by the basic designation only.

B. Federal Standard (Fed. Std.):

Fed. Std. 595 & Notice 4 Colors

C. Code of Federal Regulations (CFR) Publications:

29 CFR 1910.1001	Asbestos
29 CFR 1910.134	Respiratory Protection
29 CFR 1910.145	Specification for Accident Prevention Signs and Tags

29 CFR 1910 & 1926	Occupational Exposure Part II
40 CFR 61	Subpart B General Provisions
40 CFR Part 61	NESHAP's
40 CFR Part 763, Section 15 (a)(3)	ASHARA

D. American National Standard Institution (ANSI) Publication

ANSI Z88.2-80 Practices for Respiratory Protection

ANSI 29.2-79 Designed Operation of Local Exhaust System

1.7 EQUIPMENT

A. The following equipment shall be used by the Pintlar Corporation. Deviations from any equipment listed herein shall be submitted to the Engineer for approval.

B. Respirators Select respirators from those approved by OSHA-NIOSH, the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Health and Human Services.

1. Respirators for Handling Asbestos Provide personnel engaged in the removal demolition, and/or cleanup of asbestos materials and visitors with Powered Air Purifying Respirators (PAPR's) equipped with HEPA filters at a minimum.

C. Clothing The Pintlar Corporation shall supply clothing for all workers and authorized visitors. Those persons who may visit and who have authority to visit are:

- Representatives of U.S. Environmental Protection Agency.
- Representatives of the Occupational Safety & Health Administration
- Representatives of the Engineer
- Representatives of the Idaho Department of Labor and Industries

D. Protective Clothing Provide personnel (including authorized visitors) exposed to airborne concentrations of asbestos fibers with two layers of disposable protective whole body clothing, head coverings, gloves, and foot coverings. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Make sleeves secure at the wrists and make foot coverings secure at the ankles by the use of tape.

E. Decontamination Enclosure: Provide a decon trailer on the superfund site with separate equipment room, shower room, and a clean room for personnel required to wear whole body protective clothing. Provide two storage areas for each asbestos worker, one each in equipment and clean rooms. The permanent decon trailer is located at the main site gate. Two stage dry decon units shall be utilized for access to the individual work areas.

F. Eye Protection Provide goggles or safety glasses to personnel engaged in asbestos operations when the use of a full face respirator is not required.

G. Danger Signs and Labels Provide danger signs at all approaches to asbestos control areas containing concentrations of airborne asbestos fibers. Locate signs at such a distance that personnel may read the sign and take necessary protective steps required before entering the area. Provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos. Warning tape shall be used to isolate the general work area to prevent access to the site.

1. Danger Signs Vertical format conforming to 29 CFR 1910.145 (d)(4), minimum 20 x 14 inches displaying the following legend in the lower panel.

Danger
Asbestos
Cancer & Lung Disease Hazard
Respirators and Protective Clothing
are Required in This Area

Spacing between lines shall be at least equal to the height of the upper of any two lines.

2. Danger Labels Provide labels of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST

H. Plastic Sheet shall be 6 mil (0.15 mm) thickness as specified in sizes to minimize the frequency of joints for isolation and sealing of designated work areas. Reinforced polyethylene is required for outdoor work where wind resistance is required.

I. Tape shall be capable of sealing joints of adjacent sheets of plastic sheets and for attachment of plastic sheets to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.

J. Surfactant (Wetting Agent) shall consist of 50 percent polyoxyethylene ether and 50 percent of polyoxyethylene or polyglycol ester and 50 percent of polyoxyethylene or polyglycol ester, or equivalent approves by the Engineer, and shall be mixed with water to provide a concentration of one ounce surfactant to 5 gallons of water or 32 ml/20 quarts of water.

K. Impermeable Containers shall be properly labeled 6 mil plastic bags capable of being sealed. The containers shall be labeled in accordance with OSHA Regulation 29 CFR, 1926.58. Containers must be both air and water tight.

L. Pressure Differential Equipment shall be utilized continuously from completion of the enclosure within the work area until completion of successful final inspection, and shall be High Efficiency Particulate Air (HEPA) filtration systems equipped with filtration equipment in compliance with ANSI 29.2-79, Local Exhaust Ventilation. No air movement system or air filtering equipment shall discharge unfiltered air outside the work area. The exchange rate shall be maintained at no less than 4 air changes per hour as calculated by the Engineer.

M. Disposal Bags shall be of 6 mil minimum thickness for transportation and disposal of asbestos-contaminated material. Bags shall also be properly marked and labeled as required by NESHAP's 40 CFR Part 61.

1.8 CONSTRUCTION

A. Work Areas

1. Electrical Power Sufficient temporary power of 110 V shall be provided at the work site utilizing a portable generator. Provide temporary power in the area where abatement is taking place and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements. Ground fault interrupters shall be used to service any temporary power sources utilized during project performance. Power shall come via extension cords from a power box or an adjoining unit.

2. Water and Drain Connections: Filter all waste water through a 2 stage filtration unit consisting of a primary filter <20 microns and a secondary filter <5 microns. Water shall be provided via garden hoses from an adjoining unit.

3. Seal Openings and Surfaces Wherever abatement terminates, seal remaining ACM with encapsulant or cover with duct tape and plastic.

4. Air locks Build air locks at entrance to and exit from enclosures.

5. Fire Exits Emergency exits will be identified for all personnel prior to the commencement of work activities.

6. Clean and Remove Objects Any tools or other objects in potentially contaminated areas are to be HEPA vacuumed or wet-wiped before being removed from the area.

B. Decontamination Enclosure Systems Build suitable framing and line with plastic sealed with tape at all lap joints in the plastic for all enclosures and decontamination enclosure system rooms. In all cases, access between any two rooms within the decontamination enclosure systems shall be through a solid sealing or curtained doorway.

1. Decontamination Enclosure - Construct a decontamination enclosure adjacent to each work area which shall consist of the follows:

   a. A two stage decontamination unit consisting of two air locks shall be constructed. The airlocks shall have two curtained doorways, one to the clean area and one to the work area. Curtained doorways shall be constructed of double flaps of 6 mil polyethylene sheeting which can be secured in place with duct tape. The minimum distance between the curtained doorways shall be three feet (3').

b. Provide and post the decontamination and work procedures to be followed by workers, as described in these specifications.

2. Each worker and authorized visitor shall, upon entering the job site, remove street clothes in the clean area of the permanent three stage decon trailer, put on work coveralls and proceed to the work area. The worker shall then put on a respirator with new filters and clean protective clothing, before entering the two stage dry decontamination unit or work area.

3. All workers and authorized visitors shall, each time they leave the work area, remove gross contamination from clothing before leaving the work area, then proceed directly to the two stage decontamination unit. Workers shall perform initial decontamination by removing both layers of tyvek and respiratory protection.

   Workers shall then proceed directly to the permanent three stage decontamination unit located at the main site gate. Workers shall shower, then dress in clean clothes at the end of each day's work shift, before leaving the work site, or before eating, smoking, or drinking.

   Before re-entering the work area from the clean area, each worker and authorized visitor shall put on a clean respirator with filters and shall dress in clean protective clothing, except that workers intending to re-wear contaminated protective clothing stored in the equipment room shall enter the two stage dry decontamination unit wearing only respirators.

4. Contaminated work footwear shall be stored when not in use. Upon completion of asbestos abatement, dispose of the footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from the work area. Store contaminated protective clothing in the work area for re-use or place in receptacles for disposal with other asbestos-contaminated material.

5. Workers shall not eat, drink, smoke or chew gum or tobacco at the work site except in the established clean area.

6. Workers shall be fully protected with respirators and protective clothing from the time of first disturbance of asbestos-containing or contaminated materials prior to commencing actual asbestos abatement and until final clean-up is completed.

7. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

8. Visually inspect enclosures at the beginning of each work period.

9. Clean external surfaces of contaminated containers and equipment thoroughly by wet sponging before moving such items into the decontamination areas. Ensure that contaminated equipment does not leave work areas without thorough cleaning through the decontamination enclosure system.

C. Material Removal The external surfaces of bags shall be cleaned thoroughly by wet sponging in a designated area of the work area. Place and seal the bag into a second clean 6 mil disposal bag. Remove double bagged material to a covered vehicle for transportation to the designated disposal site. Ensure that the bagged materials are removed from the holding area by workers who have entered from uncontaminated areas dressed in clean coveralls. Ensure that workers do not enter from contaminated areas into the clean area. **Ensure that no visible emissions are generated during waste load out.**

D. Cleanup

1. Remove visible accumulations of asbestos material and debris. Wet clean all surfaces within the work area.

2. Any openings shall remain sealed and any HEPA filtration negative air pressure systems, air filtration and decontamination enclosure systems shall remain in service.

3. Clean all surfaces in the work area and any other contaminated areas with HEPA vacuum equipment, then wet wipe. A complete visual inspection will be performed of the work area to ensure that the work area free of visible ACM. If the inspection indicates that removal project performance is satisfactory, permission shall be given to remove containment barriers. If project performance is not satisfactory, reclean all surfaces.

4. All equipment used in the work area shall be included in the clean-up and shall be removed from the work areas, via the decontamination enclosure system, at an appropriate time in the cleaning sequence.

5. When a final inspection and testing determines that the area is free of visible accumulations of debris of dust, the decontamination enclosure systems shall be removed, the area thoroughly wet cleaned. A final check shall be carried out to ensure that no debris remains on surfaces as a result of dismantling operations.

E. Disposal of Asbestos-Containing Materials and Asbestos-Contaminated Waste Gross asbestos shall be bagged by the end of each work day. As the work progresses,and to prevent exceeding available storage capacity on site, remove sealed and labeled containers and dispose of at the authorized disposal site. Only sealed, properly labeled, plastic bags will be disposed of. **Submit documentation regarding disposal within 35 days of project completion**.

F. Quality Control

1. Monitoring of airborne concentrations of asbestos fibers shall be in accordance with 29 CFR 1910, 1926.

2. Monitoring Prior to Asbestos Work - Background air samples will be taken prior to enclosure of the work areas to determine background levels in areas that are potential chronically contaminated areas.

3. Monitoring During Asbestos Work - Area, barrier, environmental, and personal monitoring shall be performed by the Engineer/Industrial Hygienist (IH) during each shift of asbestos work to ensure Pintlar Corporation compliance.

4. Monitoring After Final Cleanup - A thorough final visual inspection shall be conducted by the Engineer/IH and the Pintlar Corporation Supervisor following the completion of asbestos removal.

5. Monitoring of Pintlar Corporation's Employees - The Pintlar Corporation is responsible for air monitoring of his employees as required in 29 CFR 1926.58. They shall obtain personal and excursion air samples during abatement activities. Personnel and procedures utilized by the Pintlar Corporation are subject to review by the Engineer/I.H.. The Pintlar Corporation shall submit copies of all sampling to the Engineer/I.H..

6. Site Inspection - While performing asbestos related work, the Pintlar Corporation shall be subject to on-site inspection by the Engineer/I.H. who may be assisted by safety or health personnel. If the work is found to be in violation of this specification, a stop work order shall be in effect immediately and until the violation is resolved.

G. Safety Compliance In addition to detailed requirements of this specification, comply with laws, ordinances, rules and regulations of storing, transporting, and disposing of asbestos waste materials. Comply with 40 CFR Part 61. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work. Where the requirements of this specification and referenced documents vary, the more stringent shall apply.

In addition to this work plan the Pintlar Corporation shall comply with their Site Specific Safety and Health plan for the Bunker Hill Superfund Site. Site specific hazards may include exposure to heavy metals and asbestos; confined space; slips, trips, and falls; fire; electrical hazards; heat stress; cold stress; etc..

H. Submittals The following items shall be submitted to and approved by the Engineer prior to commencing work involving asbestos materials.

1. Certificate of Compliance - Submit manufacturer's certification that sealants, vacuums, ventilation equipment, and other equipment required to contain airborne asbestos fibers comply with all requirements of this specification and of the reference publications.

2. Asbestos Plan - Discuss with the Engineer the work procedures to be used in the removal of materials containing asbestos. Such plan shall include location and layout of asbestos removal areas, decontamination enclosures, sequencing of asbestos work, air monitoring, and a detailed description of the method to be employed in order to control pollution.

3. Permits and Notification - Provide proof satisfactory to the Engineer that all necessary permits have been secured in conjunction with asbestos hauling and disposition and provide timely notification of such actions as may be required by federal, state, regional, and local authorities. Send written notification to the Boise EPA for NESHAPs notification, at least **ten (10)** working days prior to commencement of the work. The Pintlar Corporation shall obtain and pay for all necessary permits.

4. Disposal - Submit documentation regarding disposal to the Engineer prior to beginning work. Dispose of asbestos-containing materials and asbestos-contaminated waste as the work progresses to prevent exceeding available storage capacity on site. Remove sealed and labeled containers of asbestos waste and dispose of such containers in accord with applicable regulations.

5. Worker Training - Submit proof satisfactory to the Engineer that each asbestos worker employed on the project has received training through an accredited training center in accordance with regulations as set forth in 40 CFR Part 763, Asbestos Containing Materials in Schools, Final Rules and Notice and State of Idaho requirements.

6. Supervisor Training - Submit proof satisfactory to the Engineer that each asbestos work supervisor employed on the project has received training through an accredited training center in accordance with regulations as set forth in 40 CFR Part 763, Asbestos Containing Materials in Schools, Final Rules and Notice and State of Idaho requirements..

7. Postings - Pintlar Corporation will ensure that all applicable notices for compliance with OHSA, NESHAPs, ASHARA, Fair Labor Standards Act, etc. are posted in a conspicuous manner in, or outside, each decontamination unit.

I. Emergency Procedures The following information/items will be posted at the work site located at the decon area.

1. Emergency Phone Numbers - Phone numbers for Police, Fire, and Ambulatory services shall be posted in a readily accessible area near the entry to each work area. All workers shall be informed of and aware of the locations of working telephones. A map showing the quickest route to the nearest hospital shall also be posted with the above phone numbers.

   All workers shall have been made aware of and understand the Site Specific Emergency Procedures for the Bunker Hill Superfund Site prior to start of work at the Site.

2. Emergency Equipment - Two (2) class "ABC Dry-Chemical" fire extinguisher and a first aid kit will be available at each decon unit.

3. Rescue or Evacuation - All workers will have read and signed a statement that they understand the proper procedures to evacuate themselves or fellow workers in the case of an emergency. **These procedures will be reviewed and approved at the pre-work meeting.**

PART 2 - EXECUTION

2.1 ASBESTOS ABATEMENT/CLEANUP PLAN GENERAL PROCEDURES

A. All materials to be removed are located within the Roaster Floor Building and the Roaster Building, Bunker Hill Superfund Site, Kellogg, Idaho. These buildings are scheduled for demolition after the friable ACM have been removed. The Roaster Floor building is approximately 270' x 65' x 70' (L x W x H) in size. The Roaster Building is 180' x 50' x 89' (L x W x H) in size.

B. Negative air will need to be established **prior** to commencement of any abatement work in the Roaster Floor or Roaster Buildings. Exhaust points must be approved by the Engineer/I.H., with each exhaust point providing venting for one or more 2000 cfm (or other appropriately sized) negative air machines. A minimum of -0.02" of water column must be maintained.

C. Each two stage decontamination unit shall be constructed of 2x4 stud walls and plywood sheathing, or an equal system approved by the Engineer/I.H.. The walls, floors, and ceilings shall be covered with a minimum of two (2) layers of 6-mil poly sheeting, with flaps arranged to prevent the migration of contaminated air into the clean rooms and/or the outside environment. The unit shall have a chamber of sufficient size to allow for the storage of worker's and visitor's personal items while in containment.

D. Each decon unit shall also have a separate two (2) stage load-out chamber for the ACM waste and contaminated items/materials (unless prior approval is given by the Engineer for the usage of one decon unit for both personnel and waste ingress/egress), and a (3) stage area for the personal decontamination procedures.

E. **Encapsulation shall occur in every abatement area unless otherwise arranged/approved by the Engineer/I.H..**

2.2 ROASTER FLOOR BUILDING

A. The work in the Roaster Floor Building includes the removal of approximately a 2 foot section of ACM breaching material from around the access hatches to the six roasters in the building. Approximately 720 square feet of ACM breaching, and miscellaneous ACM dust/debris shall be removed in this phase of work.

The six roasters in the Roaster Floor Building have three access hatches which are located on the 2nd, 3rd and the top floors of the building. These access hatches are approximately 3 foot square.

B. All unattached/non-permanent items/furnishings will be removed from the immediate abatement area by the Pintlar Corporation.

C. A two stage decontamination unit shall be constructed at the work site, of 2x4 stud walls and plywood sheeting, or an equal system approved by the Engineer/I.H.. The walls, floors, and ceilings shall be covered with a minimum of two (2) layers of 6-mil poly sheeting, with flaps arranged to prevent the migration of contaminated air into the clean rooms and/or the outside environment. The unit shall have a chamber of sufficient size to allow for the storage of worker's and visitor's personal items while in containment.

D. Each abatement area shall be prepared for abatement with a minimum of one (1) layer of 6-mil poly sheeting over any openings and a two (2) layer drop cloth consisting of 6-mil poly sheeting on the floor. In addition, a mobile containment built over 2" x 2" studs using two layers of 6 mil poly sheeting and duct tape shall be built. An additional tear sheet shall be installed within the mobile containment. The tear sheet shall be removed after each abatement.

The mobile containment shall be attached to the roaster breaching after thoroughly encapsulating the breaching with an approved encapsulant. The polyethylene sheeting shall then be duct taped to the encapsulated breaching. After abatement is completed, the polyethylene sheeting shall be "cut away" from the breaching while leaving the duct tape in place. **Extreme care shall be taken not to disturb ACM in any manner.**

E. The ACM breaching and ACM dusts/debris will need to be adequately wet, not excessively, with amended water, and then removed. This removal shall occur while the area is **continually misted** with amended water. This area will then need to be thoroughly HEPA vacuumed and wet wiped. After removal, and cleaning of the roaster utilizing nylon brushes, the roaster and containment shall be encapsulated utilizing a Hudson type sprayer, and an encapsulant such as Foster's 22-P, or an approved equivalent/equal. The abated materials, and waste generated, will then need to be properly disposed of as asbestos-containing waste. This area will then need to be HEPA vacuumed and wet wiped.

F. The workers must double suit prior to entering the work area, and when exiting the work area they must remove the outer suit, HEPA vacuum the inner suit and remove, and proceed to the permanent three stage decontamination unit and shower.

G. During load-out procedures, the Pintlar Corporation shall ensure the adequate wetting of all materials that will be disposed of as asbestos-containing waste.

2.3 ROASTER BUILDING

A. The work in the Roaster Building includes the removal of approximately a 2 foot section of ACM breaching material from around the access hatches to the #5 roaster in the building. Approximately 120 square feet of ACM breaching, and miscellaneous ACM dust/debris shall be removed in this phase of work.

The #5 roaster in the Roaster Building has three access hatches which are located on the 2nd, 3rd and the 4th floors of the building. These access hatches are approximately 3 foot square.

B. All unattached/non-permanent items/furnishings will be removed from the immediate abatement area by the Pintlar Corporation.

C. A two stage decontamination unit shall be constructed at the work site, of 2x4 stud walls and plywood sheeting, or an equal system approved by the Engineer/I.H.. The walls, floors, and ceilings shall be covered with a minimum

of two (2) layers of 6-mil poly sheeting, with flaps arranged to prevent the migration of contaminated air into the clean rooms and/or the outside environment. The unit shall have a chamber of sufficient size to allow for the storage of worker's and visitor's personal items while in containment.

D. Each abatement area shall be prepared for abatement with a minimum of one (1) layer of 6-mil poly sheeting over any openings and a two (2) layer drop cloth consisting of 6-mil poly sheeting on the floor. In addition, a mobile containment built over 2" x 2" studs using two layers of 6 mil poly sheeting and duct tape shall be built. An additional tear sheet shall be installed within the mobile containment. The tear sheet shall be removed after each abatement.

The mobile containment shall be attached to the roaster breaching after thoroughly encapsulating the breaching with an approved encapsulant. The polyethylene sheeting shall then be duct taped to the encapsulated breaching. After abatement is completed, the polyethylene sheeting shall be "cut away" from the breaching while leaving the duct tape in place. **Extreme care shall be taken not to disturb ACM in any manner.**

E. The ACM breaching and ACM dusts/debris will need to be adequately wet, not excessively, with amended water, and then removed. This removal shall occur while the area is **continually misted** with amended water. This area will then need to be thoroughly HEPA vacuumed and wet wiped. After removal, and cleaning of the roaster utilizing nylon brushes, the roaster and containment shall be encapsulated utilizing a Hudson type sprayer, and an encapsulant such as Foster's 22-P, or an approved equivalent/equal. The abated materials, and waste generated, will then need to be properly disposed of as asbestos-containing waste. This area will then need to be HEPA vacuumed and wet wiped.

F. The workers must double suit prior to entering the work area, and when exiting the work area they must remove the outer suit, HEPA vacuum the inner suit and remove, and proceed to the permanent three stage decontamination unit and shower.

G. During load-out procedures, the Pintlar Corporation shall ensure the adequate wetting of all materials that will be disposed of as asbestos-containing waste.

2.4 Negative Air Machines

A. Negative air machines will be located in such a manner as to provide the best possible ventilation of the containment areas. Flex duct will be used to pipe the air to the outside environment.

2.5 Clearance Criteria

A. Clearance criteria will be as follows.

1. All abatement areas shall be cleared using a final visual inspection by the Pintlar Corporation, and the Engineer/IH.

2.6 Final Cleanup

A. After the Engineer/I.H. has acknowledged that abatement, and all areas affected by abatement have been cleared and cleaned to a level equal to or below the required Industry Standard criteria, enclosures are to be dismantled and all equipment/supplies are to be removed from the site. Equipment is to be washed off before being removed from the work area.

2.7 Disposal

A. The Pintlar Corporation shall dispose of asbestos waste on the Bunker Hill Superfund Site, Kellogg, Idaho. Disposal shall be conducted by certified workers who will utilize the proper personal protective equipment (PPE) during unloading of wastes (e.g. tyvek coveralls and half-face respirator with HEPA cartridges). Disposal shall follow and adhere to all the governing E.P.A. regulations. Submit copies of all forms to the Engineer.

END OF SECTION 02080